

## ABSTRACT

An optical transmission system is provided in which the optimum operating point of a Mach-Zehnder interferometer, matched to the optical frequency of the light source on the transmitting side, can be set. The optical receiver (2) has an infinitesimal-modulated signal component detection circuit (222), which uses the signal train output from a balanced detection circuit (221) to detect the infinitesimal-modulated signal component applied to the phase adjustment terminal (201) of an MZI (200) by an infinitesimal-modulated signal oscillation circuit (224); a synchronous detection circuit (223), which synchronously detects the infinitesimal-modulated signals output from the infinitesimal-modulated signal component detection circuit (222) and infinitesimal-modulated signal oscillation circuit (224) and detects the error signal component arising from the shift between the optical signal carrier frequency and the optical frequency characteristic of the MZI (200); and a controller (207), which outputs a control signal to adjust the phase difference between two split optical signals output from the MZI (200) so as to correct the shift amount.